

Achievement of Market-Friendly Initiatives and Results Program
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ASEZA PDA Project

Final Report

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This report was prepared by Lubomir Dvorsky and Andrew Ford in collaboration with The Services Group Inc., prime contractor to the U.S. Agency for International Development for the AMIR Program in Jordan.

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Abstract

The report sets out a series of recommendations and next steps for a project to introduce PDA technology to support inspection processes in ASEZ Customs, with wider application in Jordan National Customs, in concordance with the request by His Majesty, King Abdullah II, to unify Customs procedures and practices in Aqaba.

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Executive Summary

The following report presents the outcome of a series of meetings held between representatives of AMIR, ATASP, USAID and ASEZA, including meetings held with Dr. Ahmed Al-Refai, ASEZA Commissioner for Revenue and Customs. The assistance of Dr. Refai, and his staff in producing this report is gratefully acknowledged.

The report sets out a series of recommendations and next steps for a project to introduce PDA technology to support inspection processes in ASEZ Customs, with wider application in Jordan National Customs, in concordance with the request by His Majesty, King Abdullah II, to unify Customs procedures and practices in Aqaba.

In particular, the report re-emphasizes the need to adhere to a strong business case and address issues associated with data security, ASYCUDA integrity, costs and the immaturity of PDA technology mentioned in the PDA Proof of Concept Plan for ASEZ Customs, presented to ASEZA in December 2002. The importance of successfully proving the concept of PDAs in supporting inspection processes, and revealing any potential issues and risks that need to be addressed, cannot be overemphasized. At the same time, the current report acknowledges ASEZA's strong desire to proceed as quickly as possible with the project in order to introduce international best practice and technology for inspection purposes at Aqaba port.

A set of project tasks and an indicative high level project schedule were agreed at working level between AMIR, ATASP and ASEZA staff in meetings held in mid-September 2003. These have been included in the project plan included in this report.

We feel confident that, provided a disciplined approach to project management is adhered to throughout this project, continued collaboration and cooperation between AMIR, ATASP, ASEZA, National Customs and selected third party vendors, will ensure the successful delivery of this project within the seven-and-a-half month timeframe scheduled.

Background

USAID has requested the AMIR Program to respond to a request from the Jordanian Royal Court for the funding of a project to support the ASEZ Customs with the supply of PDA equipment for use by ASEZ Customs.

The PDA equipment is intended for use by ASEZ Customs for data interface from field locations in the port of Aqaba to the ASEZ Customs database (ASYCUDA). This is an issue raised initially one year ago when the ASEZA Commissioner for Revenue & Customs, Dr. Ahmed Al-Refai, requested that ATASP fund introduction of PDAs into the ASEZ Customs work environment. At that time, AMIR IT consultants Ford and Dvorsky conducted a review of the assumptions underlying the request to determine the validity of the proposal (see Attachment A).

Based on the findings of the IT experts one year ago, the expectation of the success of the proposed plan could not be justified from a business case, risks to data security, costs and immaturity of the technology. As an alternative to funding a project with an unknown but potential high risk of failure or substantial cost overrun, the AMIR IT specialists recommended a “Proof of Concept” study be conducted prior to implementation of a full scale funding commitment.

To facilitate the proof of concept, USAID through ATASP and AMIR funded the purchase of three PDAs at the cost of approximately US\$17,000.

The Proof of Concept has not been completed and AMIR has been requested by USAID to fund half of a proposed US\$300,000 project to implement the full PDA project at this time.

A project appraisal for a PDA project was presented to AMIR by Dr. Refai on 2 September 2003 outlining how ASEZA intends to use PDAs to support proposed inspection and audit processes (see Attachment Two).

This report presents a response to the project appraisal and is based on the outcome of a series of working level meetings held between AMIR, ATASP and ASEZA in mid-September 2003.

Scope of Work

1. The consultant is to follow up to the initial review by the CRM's Customs and IT specialists. Mssrs. Hekala, Zeidan, Ford and Dvorsky (the team) are to review the situation in ASEZA to find out what has been done on the Proof of Concept study partially funded by USAID in supplying the three PDAs for the test. Further to

review what changes have occurred in the ASEZA environment to rationalize the proposed project;

2. Based on their findings, the team will draft the requirements to be incorporated in a Request for Quotation and Scope of Work to insure all identified technical issues are addressed and the contract issued for the PDA project will increase the likelihood of a successful implementation; and
3. In addition to the technical hardware, software, systems interfaces and security issues covered in the contract, the team will make recommendations regarding the viability of the proposal identify the potential pitfalls and make recommendations for conditions to be included in agreements reached between the Government of Jordan and AMIR/USAID for the funding of the PDA project.

Recommendations and Next Steps

We recommend that the following be undertaken in relation to the implementation of PDA technologies by ASEZ Customs:

1. Based on the vision presented by His Majesty for the consolidation of ASEZ and Jordan National Customs, the PDAs for ASEZ Customs should be viewed as a justification for wider application across both organizations. It should be noted that Jordan National Customs is also examining the use of PDA technology – using Bluetooth, for vehicle inspections. The application of the PDA technology should be reviewed based on a business justification by Jordan National Customs and ASEZ Customs;
2. ASEZ Customs should provide suitably detailed business process maps for audit and inspection; AMIR and ATASP consultants should review these processes and determine their applicability with the technical solution selected. Mr. Alan Wilson, ATASP's Customs expert should be consulted in relation to the business process mapping. Recommendations for business process redesign to meet best Customs practice to be undertaken by ATASP. The review should take into account the outcome of prior recommendations made by ATASP for business process reengineering;
3. The pilot will help determine how much systems integration will need to be addressed. In particular, it is recommended that continuation of implementation of the PDA project subject to a review on any potential deleterious impact on ASYCUDA. Expertise in ASYCUDA from the IT Department of Jordan National Customs will be required to undertake this work;
4. USAID and the ASEZA Commissioner for Revenue and Customs will need to be satisfied that any risks identified in the Threat and Risk Assessment – to be undertaken by a third party consultant - are addressed in a detailed Threat and Risk Mitigation Strategy;

5. To justify the need for PDAs ASEZ must adopt world class technology and best Customs practice in inspection and audit. ASEZA accepted that this would facilitate compliance with USAID procurement policies;
6. It is recommended that project management and expertise in the evaluation of proposals addressing the Request for Tender and any subsequent contract determination be provided by AMIR;
7. It is recommended that procurement be undertaken by AMIR; and
8. The project plan at Attachment Three be followed by all parties, with project management being undertaken by AMIR, in close collaboration and consultation with ASEZA, ATASP, Jordan National Customs, and selected vendors (both suppliers of the PDAs and a consultant undertaken the Threat and Risk Assessment);
9. It is recommended that project planning include provision of the following – templates for which will be provided by AMIR:
 - Business Case
 - Detailed User Requirements
 - Risk Management Plan
 - Communications Plan
 - Configuration Management Plan
 - Stakeholder Management Plan
 - Change Management Plan
10. A detailed project plan is required, setting out agreed scope of work, deliverables, approach, risks, assumptions, responsibilities, and costs. This will be provided by AMIR.

Consultancy Findings

1. The team has addressed the scope of work listed above. The PDA Proof of Concept recommended by the AMIR IT consultants in December 2002 had not been undertaken by ASEZA. No apparent change to the ASEZA environment has been noticed by the team nor acknowledged by the relevant ASEZA people since the December report was compiled;

2. ASEZ Customs has therefore agreed to undertake the Proof of Concept as a component of the wider PDA project and will use the outcome of the Proof of Concept as a basis for deciding the viability of the overall PDA project;
3. A project work plan has been drafted by AMIR, in consultation with ASEZ Customs, and after agreement at the working level with ASEZ Customs that identifies the following elements:
 - a. Proof of Concept (4-5 weeks)
 - b. Identification of Pilot interface, ASYCUDA integration, and costs
 - c. Pilot Test and Evaluation
 - d. Threat and Risk Assessment
 - e. Process Mapping – Inspection and audit
 - f. Request for Proposal (2-3 weeks)
 - g. Procurement Process and Release of Request for Proposal to the Market
 - h. (4-6 weeks)
 - i. Assessment of Request for Proposal responses and selection of suitable vendors (2 weeks)
 - j. Design, development, initial testing and deployment of solution (5 weeks)
 - k. Test Plan and Training Plan (4 weeks)
 - l. Implementation of solution (4 weeks)
 - m. Post-implementation review (1 week);
4. ASEZ Customs has agreed to provide AMIR with detailed process maps covering inspection (from pre-arrival processing through to release of cargo) and audit (from pre-arrival processing of cargo to release). The process maps are to include all roles and responsibilities of ASEZ Customs officers and interface with other stakeholders;
5. The team has identified additional stakeholders at Aqaba Port, in addition to ASEZA who must be consulted and included in the PDA project design and implementation. These parties must be included due to the overall impact and levels of work the implementation of PDAs for ASEZ Customs should be viewed as a proof of concept for wider application across Jordanian National Customs. A detailed Stakeholder Plan and Communication Plan need to be completed in order for all stakeholders to be adequately informed about their roles and responsibilities and to be kept in the loop regarding the project's status; and

6. The best application for PDAs appears to be in the area of Customs inspection, control and release applications – a business case for use of PDAs within this context is probable. However because of the high front-end research and development costs, the application of the PDAs can only be justified if intended for implementation on a national basis rather than limited to the Customs functional and processing environment at ASEZA. Further, there does not appear to be a business case for the use of PDAs in the audit process. The applicable tool for an auditor that is working with historical data in a post-entry control process is a laptop computer.

Project Methodology

Attachment Three provides an overview of the proposed methodology for the PDA proof of concept project. The project will be composed of the following elements:

1. PDA Proof of Concept (Pilot)

This phase of the project will consist of the following parts:

- a) **Development of suitable interface** for the PDA that is both intuitive and can meet all of the user requirements for inspectors in the field;:
- b) **Integration with ASYCUDA** – the PDA will need to be able to be used to search, download from and upload to ASYCUDA without any change needed to be made to ASYCUDA that could risk ASYCUDA functionality or systems performance;
- c) **Threat and risk assessment** – a suitable consultant will need to be identified and tasked with preparing a detailed threat and risk assessment for the PDA project. This assessment will need to meet the mandatory elements listed on page 11 below;
- d) **Identification, review and recommended set of business processes** – which the PDA application will be used to support and which comply with Customs international best practice;
- e) **Determination of suitable/planned infrastructure** – adequate estimate of hardware and software requirements for the envisaged solution.

Deliverables:

- Interface for PDA matching user requirements;
- Functioning integration between ASYCUDA and the PDA solution;
- Detailed Threat and Risk Assessment
- Confirmed Set of Business Processes and Data Content for both the Proof of Concept and wider application of the solution
- Detailed hardware and software specifications for the envisaged solution.

2. Request for Proposal

A Request for Proposal that conforms to USAID guidelines will be developed by AMIR and provided to the market place, once the proof of concept has been undertaken by ASEZ Customs and the outcomes of the pilot reviewed by AMIR and ATASP.

Deliverables:

- Request for Proposal

3. Procurement

Once the final draft of the Request for Proposal has been finished, the procurement process with USAID in Washington by AMIR will commence. It is estimated that this will take some three to four weeks to complete and is required prior to the Request for Proposal being released to the marketplace. The Request for Proposal will allow for up to three weeks for companies to respond, with a vendor meeting most or all requirements being selected and notified.

Deliverables:

- Request for Proposal out to market
- Vendor selected for design, development and deployment

4. Design, development & deployment

Design, procurement of necessary hardware and software, development of the solution and deployment of the solution will be undertaken by the vendor and project managed by ASEZA in liaison with AMIR and ATASP.

Deliverables:

- Detailed design specifications
- Development and deployment plan
- Test plan
- Configuration plan

5. User acceptance testing

A four week period of user acceptance testing will be required from ASEZ Customs prior to the rollout of the envisaged solution. Any issues associated with UAT will need to be captured by ASEZA and resolved in liaison with AMIR. A detailed UAT Report will need to be provided prior to subsequent roll-out of the solution.

Deliverables:

- UAT Documentation

6. Implementation

Following successful UAT, the solution will be rolled out to inspectors and auditors over a four week period. A period of staff training will be required in order to assure appropriate uptake and use of the solution

Deliverables:

- Implementation of solution
- Staff training

7. Post-implementation Review

Once implementation has been completed, a Post Implementation Review will be undertaken by ASEZ Customs that identifies all issues – both resolved and unresolved, associated with the project. This will be used to assist with any further modification of the solution over time and can be used to highlight lessons learned that may assist with other projects undertaken by ASEZA in the future.

Deliverables:

- Post Implementation Review

Mandatory Considerations

The mandatory requirements included in the initial consultant's report (Attachment A) will need to be addressed by both ASEZA and AMIR if this project is to be successful. These are as follows:

Security

All parties involved will have to develop a security plan that evaluates risks, assesses the operational costs of security, identifies all underlying assumptions about how the network will be used, and considers future network changes.

The following categories need to be considered:

- *Authentication* to determine whether information is genuine, and whether the source and destination entities are what they claim to be;
- *Confidentiality control* to make information available only to authorized entities and ensure communication privacy;
- *Access control* to permit or deny access based on parameters that include but are not limited to identity of source and destination;
- *Encryption* to protect sensitive data from being observed as it travels over a network;

- *Intrusion detection/incident response* to detect and report attempts to invade a computer session; and
- *Nonrepudiation* to provide proof of transmission and reception.

Security is a vital area that must be considered from the start of discussions about any pervasive service. Wireless services and those that connect via the Internet, in particular, can open back doors into an enterprise computer system. Viruses can get in through these devices and unauthorized individuals can exploit the connections to gain entry into the system.

ASEZ Customs and Jordan Customs Department must create security policies for these devices covering audit, authentication and encryption of the application from the start. Clearly defined and documented security policies will limit Customs exposure to unauthorized access.

A thorough evaluation of the threat of compromise of the PDA solution must be conducted.

Deliverables:

- Security policies
- Security architecture
- Threat and Risk analysis

Support & Maintenance

Infrastructure must be extended to support the service that will be the outcome of a successful Proof of Concept. Network and infrastructure management will be important to provide adequate quality service to the pervasive device selected for full-scale implementation (these management capabilities have ongoing as well as upfront costs).

A comprehensive support and maintenance plan for the device will be developed as the PDA system is designed and built, and training will be provided to the support and maintenance group prior to implementation of the application once the proof of concept has been successfully completed.

Project Team

The Project Team shall include both technical staff (Jordan Customs Department ASYCUDA experts and experts from the selected vendor) and business owners (ASEZ Customs and the Jordan Customs Department) and will be managed by the AMIR Customs IT consultants with close liaison with ATASP, ASEZ Customs and Jordan Customs Department..

Training

Staff training in both technical aspects of PDA technology and associated re-engineered business processes will have to be comprehensive in order to gain the full benefits of the new technology. The development of a training plan and the reengineering of Customs processes must be done in close cooperation with both ASEZA and Jordan Customs Department officers – this will be just as important as the integrity of the technical solution.

Attachment One: PDA Proof of Concept Plan for ASEZ Customs

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PDA Proof of Concept Plan for ASEZA Customs

Project Plan

2 December 2002

This project plan was prepared by Lubomir Dvorsky and Andrew Ford in collaboration with The Services Group Inc., prime contractor to the U.S. Agency for International Development for the AMIR Program in Jordan.

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Executive Summary

The plan presented in this document is the outcome of discussions held between AMIR IT consultants, Jim King, ATASP Customs Advisor, Hussein Qasem, Computer Section Manager ASEZA, Omar Qawas, Director ASEZA Management Information System, Somaya al-Wahoush, Jordan Customs Department (JCD) IT Director, Mahmoud Wafa, Director ASYCUDA, JCD and Ismaeel Shaderma, Head of Computer Section, Aqaba Customs House. It outlines a carefully managed approach to the implementation of a proof of concept for PDA technology in a Customs context ensuring that the main benefits, and any issues or risks associated with the technology will be revealed during a staged testing process. These will need to be resolved prior to a full-scale implementation of PDA technologies.

From the beginning of the PDA project, there has been an assumption that ubiquitous wireless real-time connectivity between PDAs, used either by inspectors in the container yards or by auditors when auditing companies in Aqaba, is necessary. The AMIR IT Consultants questioned this assumption and an alternative option for PDA deployment within a Customs environment is therefore presented.

This document recommends revisiting the initial business processes proposed in the Request for Quotation and Scope of Work prepared on August 22 2002. It also recommends undertaking a proof of concept for either a wireless and a terrestrial PDA solution, following a detailed proposed methodology, prior to any larger-scale implementation of the selected technology either within ASEZA, or more broadly within other Customs domains.

Whether a PDA solution is selected and proven in concept or not, it is essential to put in place an appropriate fiber optic infrastructure connecting the various Port and Customs operations. Any future consideration of this plan will also depend on JCD and ASEZA providing a detailed business case for the project using this document as a model of minimum acceptable standards. If chosen, ASEZA envisage the proof of concept for the wireless solution being developed by one of the three PDA solution vendors short-listed, rather than being developed using in-house resources. The AMIR Customs IT consultants believe that the cost of a carefully managed proof of concept could be delivered for approximately \$20,000.

Background

ASEZA is currently investigating the use of hand-held Personal Digital Assistant (PDA) devices for cargo inspection automation and auditing. These devices would collect inspection information on the cargo floor or when performing audits, and electronically submit this data to a central back-end system. This type of automation will provide great efficiency to an identified cargo inspection process (see Attachment One).

ASEZA interest in PDAs arose from a visit to Hong Kong Customs (who use a wireless system at their Air Cargo Terminal) by Ahmed Al-Refai, Commissioner of Customs and Revenue at ASEZA. We understand that US Customs also uses a PDA system, based on a system that uses synchronization of PDAs with backend databases, rather than relying on ubiquitous wireless services.

As discussed below there are some outstanding concerns associated with wireless technology, such as security, cost and immaturity of technology and a consequent lack of standards in the wireless domain.

Location and Environment

The area covered by ASEZA and JCD inspectors is about two square kilometers (see Attachment Two). Even though the area will be consolidated into a single zone with the construction of a new bypass road in the next 6 to 12 months, the advantage of using PDA technology will still be significant.

Considering the amount of goods that transit through the Aqaba Container Yards, the current infrastructure is considered less than adequate. A fiber optic cable between the Container Yards and Customs offices was installed three years ago and has been fully utilized for video surveillance. It has been damaged because of major reorganization and consolidation underway at the Aqaba Port. Further disruption is to be expected until all upgrading of the Port takes place (estimated to be complete in three years time). Road construction is expected to be completed in six months time. This is expected to trigger consolidation of the Container Yards (refer to Attachment Two).

The Jordanian Telecommunication Corporation (JTC) is fitting out infrastructure alongside the road being constructed and at a time when the cables are fitted out, the connectivity between the Customs offices and the Container Yards should be resolved by either acquiring (9kms is estimated to cost \$20,000) or leasing a capacity from JTC. JTC needs to be approached and the most efficient solution negotiated.

Wireless technology options available would use either GSM/GPRS connections (in this case, a full wireless solution needs to be developed – estimated by the ASEZA MIS Group to cost approximately \$250,000). Another option that could be used to bridge the distance between Aqaba Port and the Customhouses is to use the existing VSAT connection between the Passenger Clearing Building and the Aqaba Customs House (ASYCUDA servers would be installed in the Passenger Clearing Building and data would be exchanged in a similar manner to that for the terrestrial solution by ASYCUDA servers synchronization, described below).

Neither of the wireless solutions addresses the lack of connectivity between the Container Yards and the Customs offices. Building a high bandwidth communications infrastructure (e.g. optic fiber cable) and connecting the Aqaba port with ASEZ Customs and JCD is considered a high priority. The lack of an adequate communications infrastructure between ASEZA and JCD and the main Container Yards for the Port of Aqaba is a serious constraint on both ASEZA and JCD operations.

Since most inspection in the container yards is performed by JCD Officers, we strongly believe that not only ASEZA Customs, but JCD as well, will reap the benefits of the PDA technology, once the implementation and full rollout is decided.

Ways Forward & Recommendations

Based on their latest findings, the AMIR IT Consultants suggest revisiting both the initial business analysis and the process redesign included in the Request for Quotation and Scope of Work written for the project on 22 August 2002. It appears, based on the

interviews the AMIR IT Consultants have conducted, that neither inspectors nor auditors select their targets randomly and targets are well known before inspectors and auditors leave their premises. This fact suggests that real-time, ubiquitous connectivity is not a mandatory requirement and thus allows for a greater variety of possible solutions that can also overcome the current limitations of wireless technology.

One such solution would be to use synchronization of data between a PDA and ASYCUDA servers when a PDA is placed in a cradle hard wire-connected to an ASYCUDA server, either in the container yards or Customs Centers. Data could then be downloaded onto a PDA before leaving the premises for either inspection or audit, and new data uploaded when returning from the inspection. Then, using the fiber optic cable between the container yards and the customs offices, the ASYCUDA servers would be synchronized.

We therefore propose that the following steps be undertaken prior to any large scale implementation of PDA technologies by ASEZA:

1. Revisit the concept and test the necessity of real time ubiquitous connectivity in light of the business processes to be supported;
2. Analyze the costs and benefits and risks of the two solutions currently available and choose one before the proof-of-concept build

Option a) Terrestrial - Use a fiber optic connection between the Container Yards and Customs offices; set up in the Container Yards a “light” ASYCUDA server exchanging data with both Customs ASYCUDAs and use hard-wire cradle synchronization between PDAs and ASYCUDA
Option b) Wireless - Have one of the pre-selected vendors build a wireless proof-of-concept solution in collaboration with the JCD ASYCUDA Team;
3. While ASEZA IT staff should make the final choice of equipment, a suitable PDA unit for use during the developmental phase might be the DOLPHIN or SYMBOL (which have already presented by Vendors to ASEZA IT staff) or a unit with a similar degree of robustness and technical capacity from another supplier. Up to three such units could be acquired at an early date for developmental and testing prototype work. Tax free price for such equipment should not exceed US\$3,500.

Decision Criteria

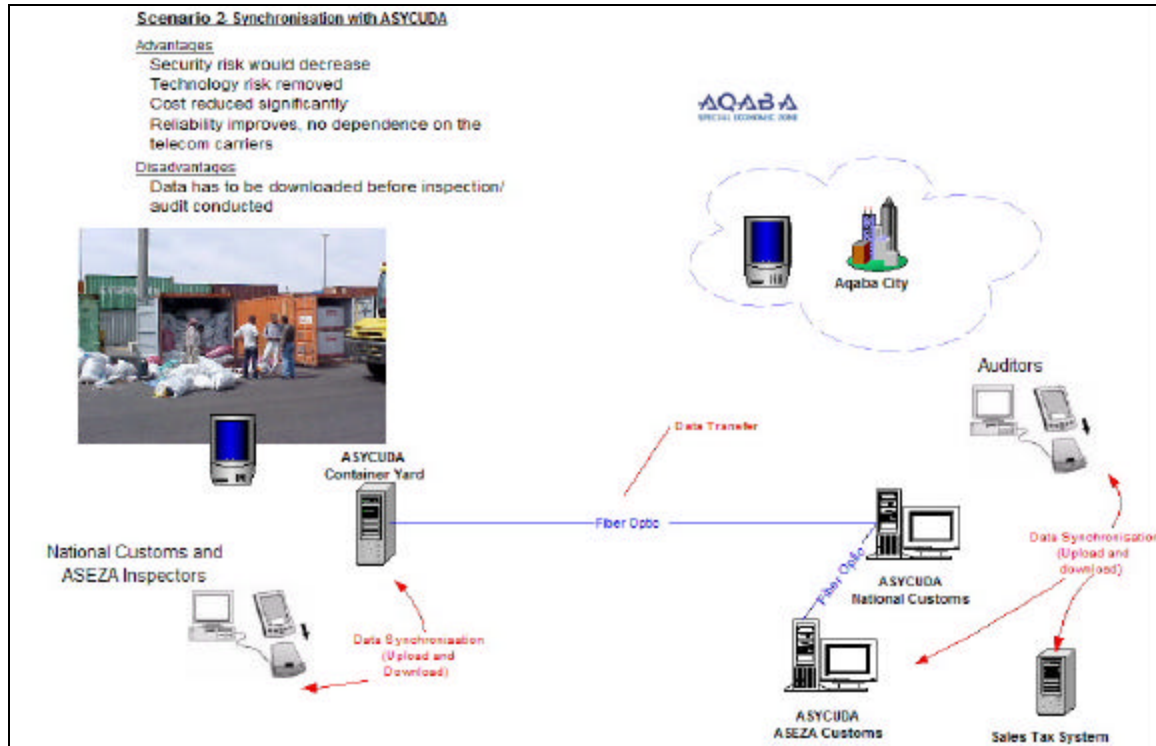
Evaluate the two options presented above on the basis of the following considerations:

- Security;
- technology maturity;
- development cost;

- solution scalability (e.g., to JCD); and
- upfront and ongoing costs

Options

a) Terrestrial Connectivity



Description

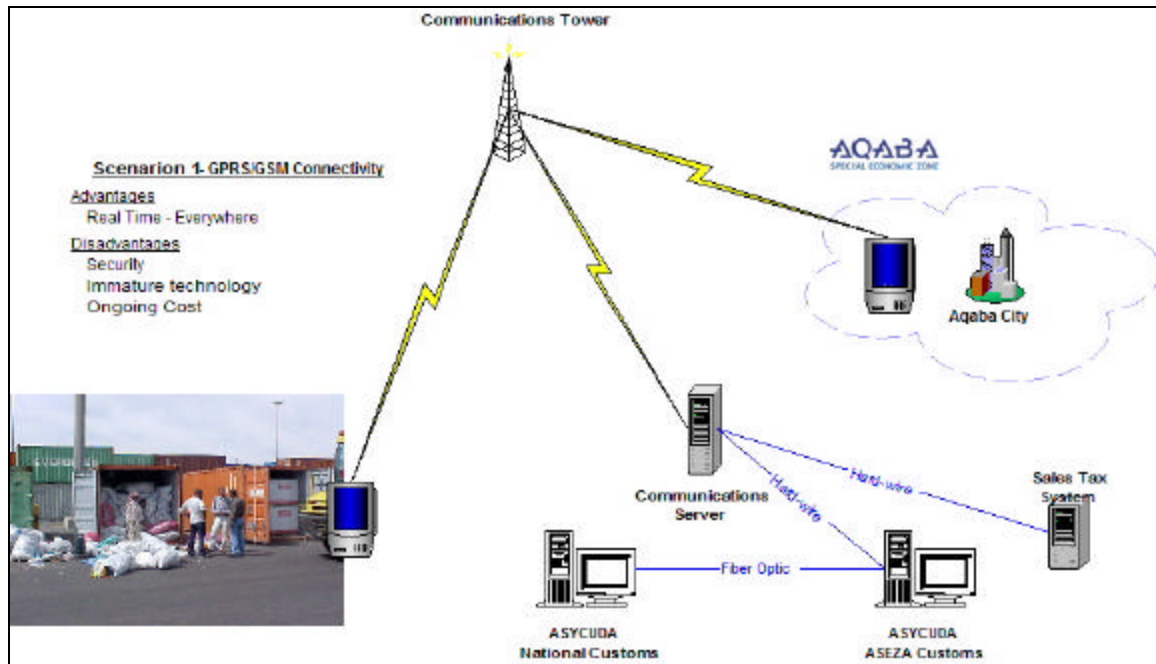
- No genuine wireless connection, necessary data is uploaded onto a PDA before leaving premises to perform a task
- All data exchange done by synchronization using cradles
- Data from the container yards transferred using a terrestrial fiber optic cable

Issues and Benefits

- Security risk, compared to the genuine wireless solution, will decrease significantly;
- Setup and ongoing cost lower than genuine wireless connection;
- Reliability improves, no dependence on telecom carriers;
- Involvement of vendors minimal;

- Software (forms) developed either by the JCD ASYCUDA team or a pre-selected vendor
- Minimized risk of choosing wrong technology in an immature and dynamic industry
- Integration with ASYCUDA can be done in Amman (as a proof of concept) and then transferred to Aqaba
- Solution much simpler with higher life expectancy

b) Genuine Wireless Connectivity



Description

- Genuine wireless connectivity

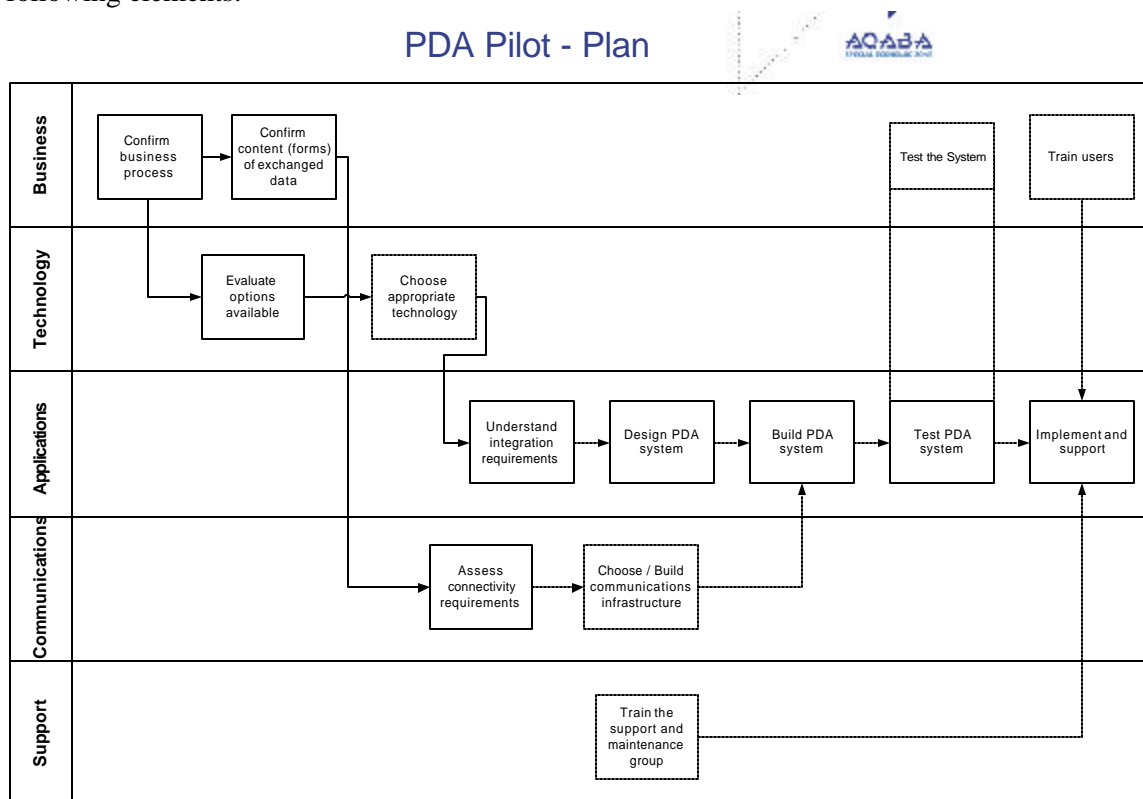
Issues and Benefits

- Ubiquitous Real time connection
- Security – weakness with current wireless security
- Immature technology
- Lack of standards in the wireless technology industry

Current cost of the wireless technology solution will halve in the next 18 to 24 months

Proposed Methodology

The proposed methodology for the PDA proof of concept project will be composed of the following elements:



1. Discover

This phase of the project will consist of the following parts:

- f) **PDA Technology Evaluation¹** and learning from customs implementation of wireless technologies in other countries (e.g. Hong Kong Customs and US Customs) to overcome two major issues:

Lack of standards – It is expected that diversity in the smart phone and PDA markets will continue for several years, with no universal, single standard emerging.

Market immaturity – significant consolidation will take place in the mobile applications space over the next 6-12 months making vendor choice risky and difficult.

The AMIR Customs IT consultants, in collaboration with JCD and ASEZA Customs, will propose the appropriate technology for the PDA Proof of Concept.

- g) **Agreement on Proposed Business Processes** from the Customs business owners and users of PDAs, including the content (forms) of the data to be exchanged between the PDAs and the ASYCUDA database.

¹ Evaluation of the solutions offered by the three short listed local vendors – Eskadenia, Javna and Apexion. The AMIR Customs IT consultants have visited the preselected vendors in Amman and evaluated the solutions being offered.

Deliverables:

- Review of PDA Technology and recommendations in relation to the PDA Proof of Concept Project
- Review of Preselected Vendors
- Confirmed Set of Business Processes and Data Content for the Proof of Concept

2. Proof of Concept Design

The Design Phase of the project consists of two elements:

- a) **Prepare Development and Test Environments**. This includes the following:
 - a. **For Wireless Option**
 - Provision by ASEZA of an appropriate communications server for the chosen applications (Cost yet to be determined)
 - Agreement between AMIR and ASEZA on the security and communication infrastructure to be used (e.g., GSM/GPRS, VPN, etc)
 - Acquisition by AMIR of three PDAs including the wireless modems for the Proof of Concept (approx \$6,000)
 - Interface between wireless solution and ASYCUDA ++ to be developed by the JCD ASYCUDA technical team in Jordan Customs Department in Amman.
 - b. **For Terrestrial Option**
 - Interface between the PDA solution and ASYCUDA ++ to be developed by the JCD ASYCUDA technical team in JCD in Amman.
 - Acquisition by AMIR of three PDAs including the cradles for synchronization for the Proof of Concept (approx \$6,000)
- b) **Explore data exchange mechanism** to be used between the PDAs and ASYCUDA ++. Currently there are two proposed approaches
 - Using ASYCUDA++ Gate. This option will involve collaboration with the ASYCUDA support team from the JCD in order to develop the way of exchanging data between the PDA and ASYCUDA using proprietary ASYCUDA modules.
 - ASYCUDA support team from the JCD will design a solution for exchanging data between PDAs and the Oracle database underlying the ASYCUDA ++ application.

- ASEZA MIS will design a solution for exchanging data between PDAs and currently being completed ASEZA Sales Tax System.

Deliverables:

- Test Environment for the Proof of Concept, including full set of configuration and design documentation
- Design and IT architecture documentation provided two approaches for data exchange between the PDA and ASYCUDA ++

3. Proof of Concept Build

Once all the necessary hardware and software has been acquired, based on the chosen solution, JCD with the selected vendor will build, configure and test the infrastructure to be used for the proof of concept. The configuration of the test environment will be fully documented.

Deliverables:

- Proof of Concept infrastructure

4. Proof of Concept Test

ASEZA MIS, ASEZA Customs, and JCD will develop a comprehensive test plan for the proof of concept and user acceptance testing (UAT).

Deliverables:

- Test Plan
- UAT Documentation
- Evaluation Report on the Proof of Concept

5. Decide Best Option

Based on the Evaluation Report mentioned above, the decision will be made by AMIR, JCD and ASEZA on the most appropriate technical solution before any full-scale rollout.

Deliverables:

- Decision on the technical solution

6. Implementation

Following documentation will be essential to ensure a seamless full-scale implementation once the Proof of Concept has been completed and tested successfully:

1. Budget & Resource Plan
2. Change Management Plan
3. Communications Plan
4. Configuration Management Plan

5. Internal Audit
6. Issues Register
7. Project Management Plan
8. Project Status Reports
9. Quality Plan
10. Roles & Responsibilities

Any future consideration will then depend on JCD and ASEZA providing a detailed business plan for the project using this document as a model of minimum acceptable standards.

Mandatory Considerations

Security

All parties involved will have to develop a security plan that evaluates risks, assesses the operational costs of security, identifies all underlying assumptions about how the network will be used, and considers future network changes.

The following categories need to be considered:

- *Authentication* to determine whether information is genuine, and whether the source and destination entities are what they claim to be;
- *Confidentiality control* to make information available only to authorized entities and ensure communication privacy;
- *Access control* to permit or deny access based on parameters that include but are not limited to identity of source and destination;
- *Encryption* to protect sensitive data from being observed as it travels over a network;
- *Intrusion detection/incident response* to detect and report attempts to invade a computer session; and
- *Nonrepudiation* to provide proof of transmission and reception.

Security is a vital area that must be considered from the start of discussions about any pervasive service. Wireless services and those that connect via the Internet, in particular, can open back doors into an enterprise computer system. Viruses can get in through these devices and unauthorized individuals can exploit the connections to gain entry into the system.

ASEZ Customs and JCD must create security policies for these devices covering audit, authentication and encryption of the application from the start. Clearly defined and documented security policies will limit Customs exposure to unauthorized access.

A thorough evaluation of the threat of compromise of the PDA solution must be conducted.

ASEZA MIS have proposed using Virtual Private Network (VPN) technology to ensure encrypted and more secure data exchange and more robust protection of the data passed over a wireless link between PDAs and ASYCUDA.

Deliverables:

- Security policies
- Security architecture
- Threat and Risk analysis

Support & Maintenance

Infrastructure must be extended to support the service that will be the outcome of a successful Proof of Concept. Network and infrastructure management will be important to provide adequate quality service to the pervasive device selected for full-scale implementation (these management capabilities have ongoing as well as upfront costs).

A comprehensive support and maintenance plan for the device will be developed as the PDA system is designed and built, and training will be provided to the support and maintenance group prior to implementation of the application once the proof of concept has been successfully completed.

Project Team

The Project Team shall include both technical staff (ASYCUDA and the selected vendor) and business owners (ASEZA Customs and JCD) and will be managed by ASEZA Customs and JCD with close liaison with the AMIR Customs IT consultants.

Training

Staff training in both technical aspects of PDA technology and associated re-engineered business processes will have to be comprehensive in order to gain the full benefits of the new technology. The development of a training plan and the reengineering of Customs processes must be done in close cooperation with both ASEZA and JCD officers – this will be just as important as the integrity of the technical solution.

Attachment One: Business Processes Initially Proposed

Cargo Inspection Automation

Currently, ASEZA has ASYCUDA++ for customs handling automation. This system can be considered as a legacy system with its older version installed at ASEZA Customs. It covers all the custom clearance processes at the customs offices but lacks coverage of the inspection processes on site, where there are no computer terminals. Having PCs on site is practically impossible due to the geography and type of function. The processes on site are as follows:

Consignments are classified according to the selecting criteria, which is based on the risk analysis, to the following channels:

1. Green
2. Yellow
3. Red.

After registration of the customs declarations, the designated officer shall perform cursory or through examination according to instructions. In normal circumstances number of packages are chosen for examination as representation of the whole consignment.

Through examination is performed in the following cases:

1. Bulk goods.
2. Goods imported with improper seal, ropes, or tarp; suspected goods or those that involves a violation of the zone law or customs regulations.
3. Goods that owner's of which apply for voluntary amendments.
 - Goods and vehicles in transit are inspected by examining the integrity of the seals, ropes and tarp, unless in cases of suspect or having prior intelligence.
 - It is allowed to undertake inspection outside the customs yards upon the request of the related person in the following cases:
 1. Full production units, such as, production lines which are shipped unassembled or goods that may not be inspected unless after installation in the site.
 2. Heavy weight goods that can't be handled with in the customs yards.
 3. Fragile, perishable goods.
 4. Hazardous goods.
 5. Any other goods that the directorate approves

The following shall not be inspected:

1. Articles imported in the name of his majesty.
2. Articles imported for the Royal Palaces.
3. Articles imported by Diplomatic missions and post on reciprocity basis.
 - Inspection is conducted on the red channeled declarations only, whether it arrives by sea (through Aqaba port) or by road, declaration is transferred to inspection so as to ask the inspector to conduct inspections; inspections can be conducted only at the presence of the declarant.
 - The inspection officer conducts examination of the goods imported through the port of the Aqaba in the yards. (Yard 1, Yard 2: yard of the special economic zone, Yard 4: The refrigerated containers Yard and Yard 7, as well as zone customs warehouse). The sample committee under the supervision of the

inspector takes samples whether standards and metrology department, health ministry, ministry of agriculture or agricultural marketing department, may require these samples.

- Goods imported by road are examined by the inspector in the zone customs yard (The old checkpoint site) after preparing an AA9 entry declaration.

Goods are released only after satisfying all approvals for such release. Whether by physical inspection conducted by the members of the committees or by stating on the back of the declaration the approval of the designated body officer to unload goods and take the samples at the trader's warehouses; goods are released after submitting a customs undertaking by the broker or the related person.

- The inspector examines the contents of local invoices the value of which exceeds 1,000 JD and less than 10,000 JD for refund of the tax; as for the inspection of cement, it is conducted at desert highway checkpoint. 5 JD/ truck service fee is collected for night or on holiday inspection according to article K/3 of instruction 7 for the year 2001, which is paid by the related person to the cashier in the cargo clearance house.

Inspection procedures:

1. After presenting the declaration to the inspector, he shall review carefully and fully the supporting documents (bill of lading& certificate of origin), and to cross-reference invoices against packing lists to check that all imported goods have been included in the total value. And then matching them against the actual goods inspected.
2. Check the integrity of customs seals, ropes, rings and tarp.
3. The inspector counts the total number of parcels to match it with the attached invoices, packing list and the declaration as to the description of goods, mark and numbers.
4. The inspector must note the description of goods, origin, number of parcels and weight, and that the goods are in good shape with no discrepancy and to write that down in his report.
5. If there is no matching, the inspector shall count all the contents to determine the shortage or overages.
6. The inspector notates shortages or overages on a memo, which is transferred to the cases section to take necessary action.
7. The inspector shall state his findings on the declaration or on the inspection form (The customs seal is intact, and was unplaced under my supervision; parcels numbered _____ were inspected by me, and the contents were found _____, and it is matching the declaration and invoice, which are attached and signed by me, as to kind and number.
8. The inspector shall examine the integrity of the seals and a quit the transit declaration of the goods entering through the cross points and customs houses of the zone.

Tasks of the inspector

1. To examine the imported goods into the zone.
2. To take samples by the sample committee with the signature of the inspector on the sample.
3. To participate in the destruction committee. Also the inspector performs a final auditing of the declaration before the assessment process, he requests that the clearance company provide additional supporting documentation including other agencies approvals. The inspector may detect an error or a violation.

Tasks of the inspection auditor:

1. To audits the declarations documents.
2. Match the names of consignee and consignor against those stated in the declaration, bill of lading and delivery note.
3. To mach number of parcels, additional units against the declaration, bill of lading, invoices, and packing lists.
4. To check the bill of lading number.
5. To check the certificate of origin.
6. To check fumigation certificate (if goods are not brand new).
7. To check the other agencies approvals.
8. To match the inspector finding with the attached invoice and packing list.

Valuation:

Where there is a major discrepancy between the real transaction value and the declared value, the inspection officer shall, during post auditing stage, uplift the transaction value by valuation and this is made after the approval of the related person; the customs declaration is amended by query sections in the cargo customs house using a query form (attachment 4); in case the related person refuses the valuation value, he must present his correspondences to prove the alleged transaction value.

- If auditing result of the Red-Yellow declaration is matching, the channel of these declaration shall be changed by the head of section to green, so as the declarant can print out the assessment notice; If the result is not matching, this should be explained by amending the declaration then transfer it to the head of section and if he approves amendments, he transfers this from to the query section to check the violation.
- After the accomplishment of all customs procedures (inspections valuation, post auditing, if required, the head of section assess the customs declaration, so that the declarant can print the assessment notice, then transfer the declaration to completion section to take necessary action.

Auditing Automation

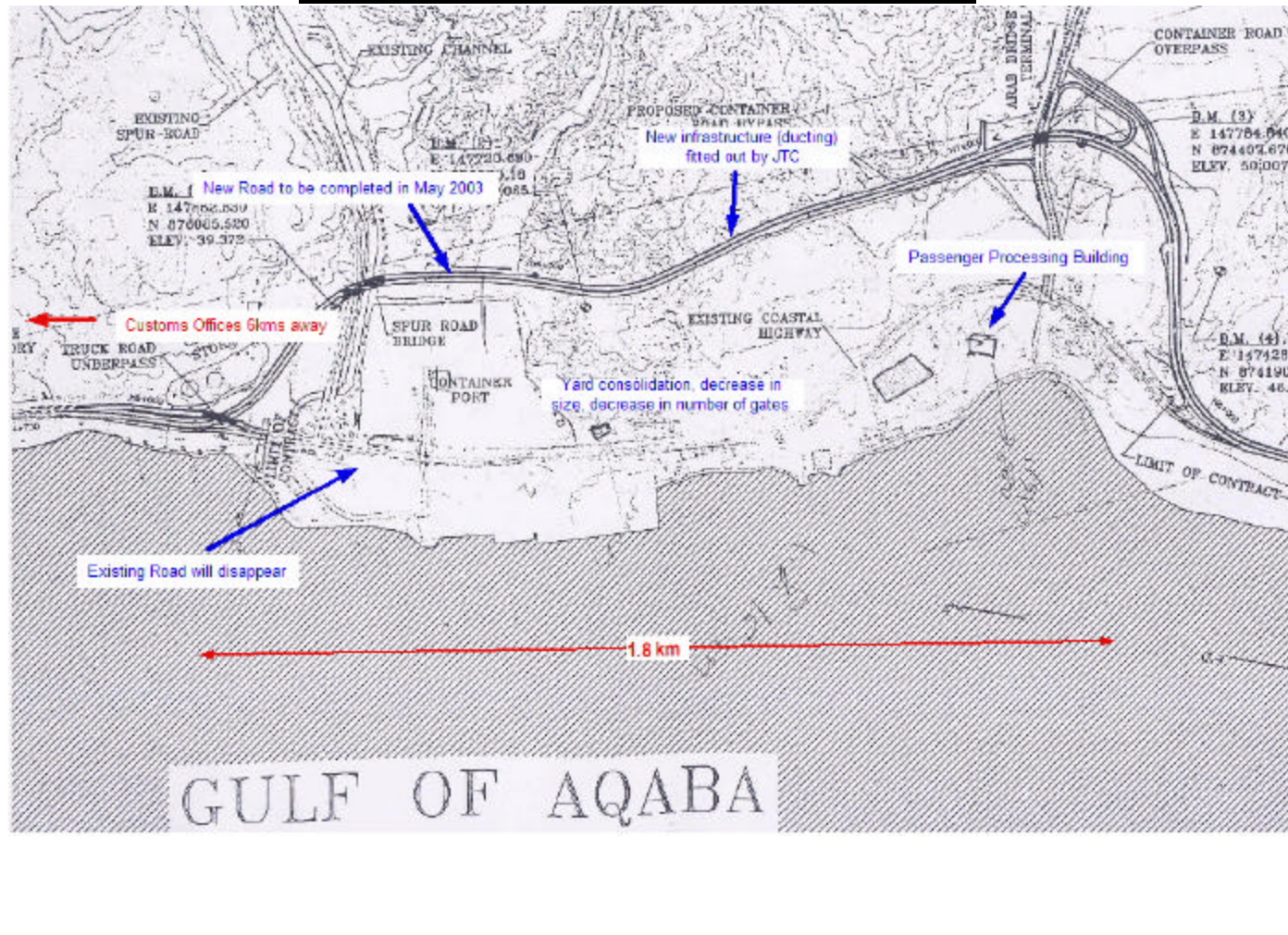
The Auditing Phase consists of two parts, the first part is related to the cargo inspection auditing which performs the similar inspection processes to verify the outcomes, and the other part is related to Sales Tax auditing automation which takes place based on:

1. Criteria Selection: This is where the Sales Tax Division staff choose the Enterprises to be audited based on one or more of the following:
 - Higher sales volume.
 - Enterprise asks for registration cancellation.
 - Enterprise does not audit for more than six tax periods.
 - Enterprise is usually late in performing Declaration.
 - Enterprise asks for refund.
 - Random Selection of enterprises.
2. Other factors: for example the commissioner's request to audit a specific sector or perform auditing on an unregistered enterprise that is selling Goods & Services subject to tax.

After choosing the Enterprises that are to be audited according to one or all the selection criteria listed above, the following takes place for each Enterprise in the list:

1. A committee is formed to audit the Enterprise.
2. Committee gathers all the necessary information about the enterprise. Things like the Enterprise basic information, declared periods since last auditing, any undeclared tax periods, previous auditing reports and Enterprise purchases from other enterprises.
3. If the Enterprise is importing Goods, then the Committee uses the ASYCUDA system to gather information about the imported goods.
4. Committee informs the Enterprise of the time of the scheduled visit.
5. Committee visits the Enterprise and performs all the necessary investigations. The auditors can check all the documents provided by the Enterprise including the bills, visit warehouses, etc.
6. Based on their findings and visit, the Committee can perform the following on the audited Enterprise:
 7. Estimate the Tax for any undeclared tax period.
 8. Modify any declaration that needs modification.
 9. Impose penalties on the Enterprise on violations.

10. Fill the analysis forms on all sales and purchases conducted by the enterprise from and to other registered enterprises.
11. The committee issues an internal report with all its findings. This report includes the following:
 12. Number of & Total of all Estimated Periods on undeclared tax periods – if any.
 13. Number of Modified Declarations as well as the total of the differences on all the Modified Declarations – if any.
 14. Total of all penalties imposed on the Enterprise – if any.
 15. All the modified Declarations are also attached to the report.
 16. The Committee members should all approve the internal report and sign it.
17. A Request Notice is issued for the enterprise with the total amount of demand – if any and Legal Affairs section handles the issue from there.

Attachment Two: Map of Aqaba Container Yards

**Attachment Two: ASEZA Project Appraisal – Automation of the Cargo Inspection
and Audit Activities using Personal Digital Assistance (PDA) Project**

Project Appraisal

**Automation of the Cargo Inspection and Audit Activities using Personal Digital
Assistance (PDA) Project**

Presented to

**Achievement of Market-Friendly Initiatives and Results Program; (AMIR
Program)**

A program funded by U.S. Agency for International Development

By

**Dr. Ahmed Al-Refai, Commissioner
Customs and Revenue Commission**



**2-September-2003
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1. **Background**

ASEZA Customs and Revenue Commission is currently investigating the use of hand-held Personal Digital Assistant (PDA) devices for cargo inspection automation and auditing. These devices would collect inspection information on the cargo floor or when performing audits, and electronically submit this data to a central backend system. This type of automation will provide great efficiency to an identified cargo inspection process.

Considering the amount of goods that transit through ASEZ and the diversity of the border entry points, the advantage of using PDA technology will be of significant value.

ASEZA interest in PDAs arose from a visit to Hong Kong Customs (who uses a wireless system at their Air Cargo Terminal) by Dr. Ahmed Al-Refai, Commissioner of Customs and Revenue at ASEZA. ASEZA would like to use the handheld units to enhance the Inspection and Audit capability of the inspection and audit sections.

On May 2002 ASEZA MIS furnished emails to a list of five short-listed vendors and supplied them with samples of forms used in the inspection process to be used in their presentation. On June 8, 2002 one of the five vendors requested a fee of 4000.-Jordnian Dinars to prepare a live demo. During the June 19 – 20, 2002, the other four vendors made successful demonstrations in ASEZA of their proposed solutions. The demonstrations were recorded on video tape.

On September 19, 2002, a meeting was held in ASEZA with Commissioner Dr. Ahmed Al-Refai – Commissioner of Customs and Revenue, Mr. Steve Wade – Chief of Party AMIR II, Mr., James Schill – USAID and others. During that meeting, USAID confirmed its interest in funding the PDA project through AMIR II program.

The importance of the PDA Project have been boosted after His Majesty King Abdullah II visit to the Customs directorate on 27-July-2003 where His Majesty showed interested in using the PDA to automate cargo inspection and audit. His Majesty indicated that he would like to see the PDA used on site by his next visit to ASEZA Customs Directorate.

All proprietary details and technical information pertaining to the PDA project is currently kept for internal use and circulation between ASEZA Revenues and Customs commission and the MIS directorate. As of the date of releasing this document, no request for proposal or quotation have been released or disclosed to public or to any short listed vendors.

2. Introduction

This document provides information on the technology, communication and business requirements for implementing the PDA project; it also provides an overview of the possible means of implementing the project. The PDA project shall be configured with all functionality required for conducting inspection and audit visits. Initially, the system will be implemented at:

- ◆ The Inspection Section (Phase I)
- ◆ The Audit Section (Phase II)

The PDA project will be used as a powerful Management Information Technology tool to increase compliance level of ASEZA customers to the rules and regulations of Customs and Revenue Commission by conducting wide variety of inspection visits and electronically log and trace inspection and audit data.

The PDA Project is should have a flexible configuration capability and able to cater to the overall needs of the Customs and Revenue commission and related directorates and sections involved in conducting cargo inspection and audit.

This document is not intended to act as request for proposal, request for quotation nor a scope of work for prospective bidders. The document highlights the requirements for the PDA project and describes expected benefits and enhancements that results from implementing the project.

3. Project Objectives

ASEZA is open to implement either a ready made parameterized application having a fully integrated modules with the capabilities to deliver all required functionality and respond to ASEZA current and future business requirements or to a tailor-made application capable of responding to ASEZA needs and requirements and can be integrated with ASEZA existing applications and systems. The initial goal of either solutions (ready or tailor made) is to eliminate multiple handling of data, increase accuracy, improve service time and provide management with a reporting and tracking tool.

A main objective of the PDA is to update, automate and streamline the current inspection and audit procedures at ASEZA Customs directorate. Other main objectives are

- ◆ Provide controlled, secured and strict inspection, audit and cargo releases procedures to ensure accurate and efficient processes.
- ◆ Streamline the inspection, audit, consignments releases and observations recording process.
- ◆ Interface the acquired solution with ASYCUDA system to retrieve and update all consignments and customer details .
- ◆ Provide ASEZA Customs management with an information management tool to manage, track, follow up, monitor, approve/disapprove, administer, analyze cargo inspection and audit activities.
- ◆ Enhance the quality of services provided to ASEZA customers.
- ◆ Eliminate paper-based systems
- ◆ Increase staff productivity
- ◆ Reduce Manual Data Entry Errors
- ◆ Increase Customer Satisfaction
- ◆ Increase accountability
- ◆ Provide accurate and exact Harmonized Coding to the inspected and audited items (100% Compatibility with HS-Coding)

- ◆ Provide Audit Trail / Tracking Reports

4. Current Situation at Inspection and Audit Sections

4.1 The ASYCUDA System

Currently, ASEZA Customs Directorate uses ASYCUDA system for customs handling automation. It covers customs clearness processes at customs office but lacks coverage of the inspection and audit processes on site, where no computer terminals are installed due to the geography and type of function. ASYCUDA main database is Oracle that is installed on an IBM Unix server connected to a network switch with ASYCUDA client workstations which are running Microsoft Windows 98, Nafitha Arabization Software (a legacy dos-based proprietary Arabization layer) and ASYCUDA MS-DOS based client. Although the ASYCUDA system enables ASEZA to provide fast and responsive custom clearness service, however it doesn't cater for ASEZA customs rules with respect to cargo follow-up, monitoring and auditing. The ASYCUDA system was designed to efficiently manage and automate general customs clearness processes and is short in meeting ASEZ customs special business requirements.

4.2 The Inspection Process

In order to import good into ASEZ, customers have to be registered with ASEZA (i.e. Registered Enterprise), the registration will give customers the benefit and option to admit good to bonded warehouses and/or release goods to the zone directly. The registered enterprise will receive a unique identification number that will be used later on in his communication with ASEZA Customs.

- The carrier or clearing agency enters the consignment details to the ASYCUDA system. Attached is Consignment Declaration Form AA9 in use by registered enterprises to declare consignment details.
- The application will be received by the Reception Section and inspected for missing information or supporting documentation.
- Next, Consignment will need to be classified according to a certain Risk Analysis criteria into one of the following channels
 - Green
 - Yellow
 - Red
- After the consignment is classified, the declaration will be routed to the Inspection section, where the designated officer shall perform cursory or through examination according to instruction and pre-set criteria.
- The criteria of conducting Thorough examination depends one or more of the following short-list
 - Customer Track Record and Profile
 - Goods Country of Origin
 - Goods Type and Nature
 - Good imported with improper seal, ropes or tarp
 - Suspected good or those that involves a violation of the zone law or customs regulations
 - The Inspector previous experience.
 - The improper application of the HS-Coding due to inconformity either noted on the declaration form or noted on the shipping invoice
- The Thorough examination involves onsite inspection where the following procedures/activities take place:
 - After presenting the declaration to the inspector, he shall review carefully and fully the supporting documents (bill of lading& certificate of origin), and to cross-reference invoices against packing lists to check

that all imported goods have been included in the total value. And then matching them against the actual goods inspected.

- Check the integrity of customs seals, ropes, rings and tarp.
 - The inspector counts the total number of parcels to match it with the attached invoices, packing list and the declaration as to the description of goods, mark and numbers in his report.
 - The inspector must note the description of goods, origin, number of parcels and weight, and that the goods are in good shape with no discrepancy and to write that down in his report.
 - If there is no matching, the inspector shall count all the contents to determine the shortage or overages.
 - The inspector notates shortages or overages on a memo, which is transferred to the cases section to take necessary action.
 - The inspector shall state his findings on the declaration or on the inspection form (The customs seal is intact, and was unplaced under my supervision; parcels numbered _____ were inspected by me, and the contents were found _____, and it is matching the declaration and invoice, which are attached and signed by me, as to kind and number.
 - The inspector shall examine the integrity of the seals and a quit the transit declaration of the goods entering through the cross points and customs houses of the zone.
- If no violations are noted, the inspector releases the consignment and amends ASYCUDA to change the consignment status into released.

Inspector's notes, violations and other comments are not captured by ASYCUDA and are later manually entered into a simple in-house developed application. The new solution should eliminate such shortcoming and automatically update the backend system and ASYCUDA wherever needed.

Tasks of the inspector

1. To examine the imported goods into the zone.
2. To take samples by the sample committee with the signature of the inspector on the sample.
3. To participate in the destruction committee. Also the inspector performs a final auditing of the declaration before the assessment process, he requests that the clearance company provide additional supporting documentation including other agencies approvals. The inspector may detect an error or a violation.

Tasks of the inspection auditor:

1. To audits the declarations documents.
2. Match the names of consignee and consignor against those stated in the declaration, bill of lading and delivery note.
3. To mach number of parcels, additional units against the declaration, bill of lading, invoices, and packing lists.
4. To check the bill of lading number.
5. To check the certificate of origin.
6. To check fumigation certificate (if goods are not brand new).
7. To check the other agencies approvals.
8. To match the inspector finding with the attached invoice and packing list.

Valuation:

Where there is a major discrepancy between the real transaction value and the declared value, the inspection officer shall, during post auditing stage, uplift the transaction value by valuation and this is made after the approval of the related person; the customs declaration is amended by query sections in the cargo customs house using a query form; in case the related person refuses the valuation value, he must present his correspondences to prove the alleged transaction value.

- If auditing result of the Red-Yellow declaration is matching, the channel of these declaration shall be changed by the head of section to green, so as the declarant can print out the assessment notice; If the result is not matching, this should be explained by amending the declaration then transfer it to the head of section and if he approves amendments, he transfers this from to the query section to check the violation.
- After the accomplishment of all customs procedures (inspections valuation, post auditing, if required, the head of section assess the customs declaration, so that the declarant can print the assessment notice, then transfer the declaration to completion section to take necessary action.
-

Figure 1 below, depicts the high level process flow of consignment clearness

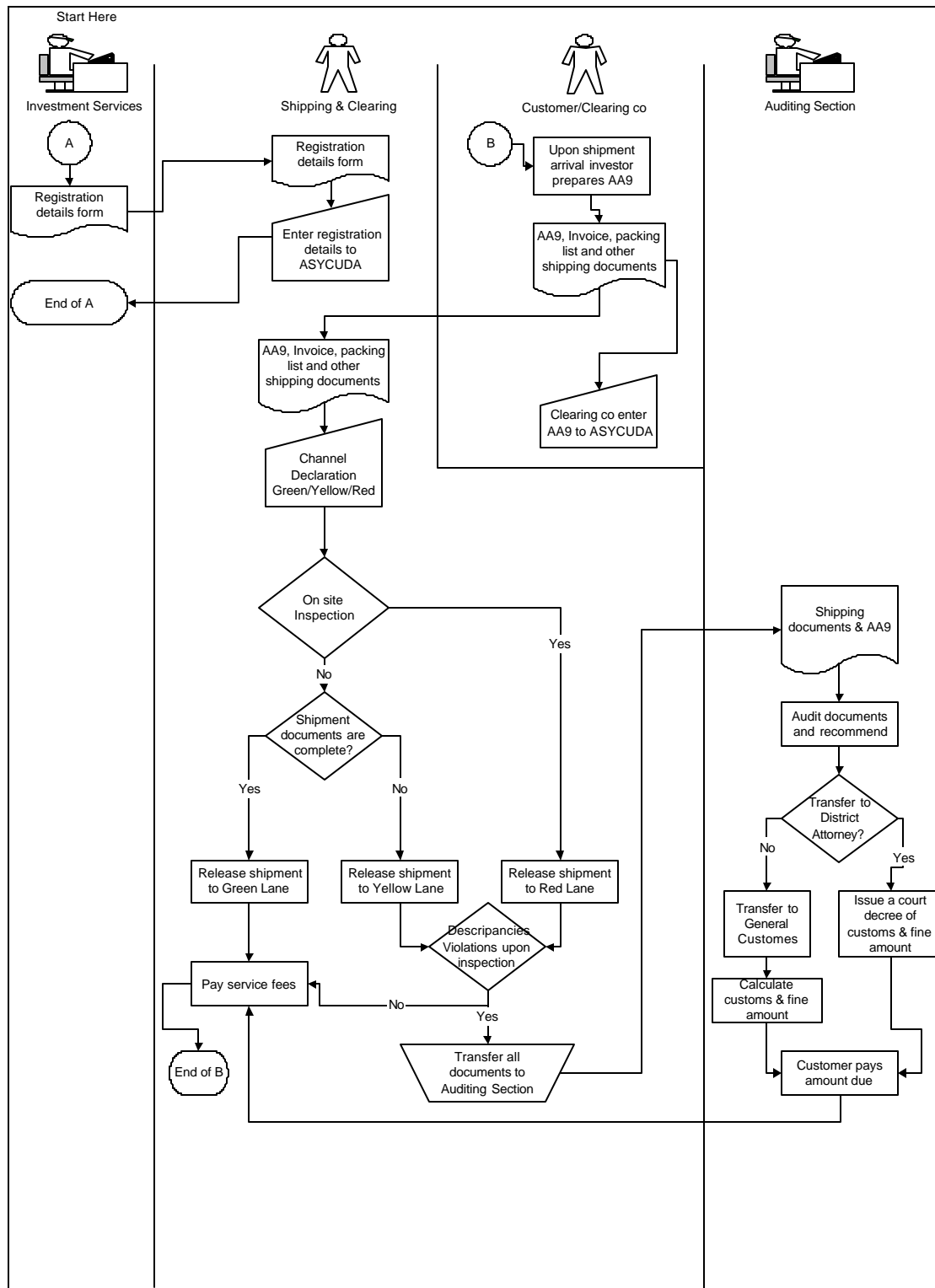


Figure 1

4.3 The Audit Process

The Auditing process consists of two parts, the first part is related to the cargo inspection auditing which performs the similar inspection processes to verify the outcomes, and the other part is related to Sales Tax auditing automation that takes place based on:

1. Criteria Selection: This is where the Sales Tax Division staff chooses the Enterprises to be audited based on one or more of the following:
 - ◆ Higher sales volume.
 - ◆ Enterprise asks for registration cancellation.
 - ◆ Enterprise does not audit for more than six tax periods.
 - ◆ Enterprise is usually late in performing Declaration.
 - ◆ Enterprise asks for refund.
 - ◆ Random Selection of enterprises.
2. Other factors: for example the commissioner's request to audit a specific sector or perform auditing on an unregistered enterprise that is selling Goods & Services subject to tax.

After choosing the Enterprises that are to be audited according to one or all the selection criteria listed above, the following takes place for each Enterprise in the list:

1. A committee is formed to audit the Enterprise.
2. Committee gathers all the necessary information about the enterprise. Things like the Enterprise basic information, declared periods since last auditing, any undeclared tax periods, previous auditing reports and Enterprise purchases from other enterprises.
3. If the Enterprise is importing Goods, then the Committee uses the ASYCUDA system to gather information about the imported goods.
4. Committee informs the Enterprise of the time of the scheduled visit.
5. Committee visits the Enterprise and performs all the necessary investigations. The auditors can check all the documents provided by the Enterprise including the bills, visit warehouses, etc.
6. Based on their findings and visit, the Committee can perform the following on the audited Enterprise:
 7. Estimate the Tax for any undeclared tax period.
 8. Modify any declaration that needs modification.
 9. Impose penalties on the Enterprise on violations.
 10. Fill the analysis forms on all sales and purchases conducted by the enterprise from and to other registered enterprises.
 11. The committee issues an internal report with all its findings. This report includes the following:
 12. Number of & Total of all Estimated Periods on undeclared tax periods – if any.
 13. Number of Modified Declarations as well as the total of the differences on all the Modified Declarations – if any.
 14. Total of all penalties imposed on the Enterprise – if any.
 15. All the modified Declarations are also attached to the report.
 16. The Committee members should all approve the internal report and sign it.
 17. A Request Notice is issued for the enterprise with the total amount of demand – if any and Legal Affairs section handles the issue from there.

Auditors observations and reports are maintained on manually records, ASYCUDA is not updated and accessing previous audit reports is time consuming and inefficient. Access to preliminary audit information is also time consuming and not available in a timely manner and is also not provided by ASYCUDA. The new solution should provide audit information in a timely and accurate manner and enable auditors to electronically record their audit comments.

4. Current Issues Facing the Inspection and Audit Activities

Apart from the manual onsite inspection and audit process, the current processes would need to be enhanced and automated to achieve better service levels and higher standards.

ASEZA is created to act as a model in Jordan for efficient systems. However, the current cargo inspection handling and audit activities are experiencing the following shortcomings:

- Lack of on-line and fast reporting mechanism to allow auditors to retrieve customer profile and plan their audit accordingly.
- Inspector's notes, violation comments and other important data are kept on the manual records and not electronically archived.
- Manual records are kept with the clearing company for long period of time that increases risk and waste time.
- Customers experience delays while waiting for inspectors to finish their inspection "to-do" list and return to clear the declaration.
- Customers can only perform a only those declaration that he initially prepared before visiting the inspection yards.
- Inspectors at inspection yards does not receive proper risk management data that enables him to conduct the proper inspection. The immediate and online receipt of risk data from ASYCUDA will enable the inspector to carry the appropriate inspection, understand the rationale behind it and save time.
- The Audit process is kept independent from the inspection process where it should be driven by inspection data and observations. The inspection is directed by Risk Analysis criteria, and the Audit should be directed by observations and reports from the Inspection. The inspector comments and observations will provide exact details of items including model number and other technical specification. Such comments are not captured by the ASYCUDA system and kept in isolation from the Auditor that raises the risk in the auditing processes that will lack access to accurate information on goods.
- Conducting an audit on a registered enterprise requires a lot of preparation and time consuming.

5. Available Solutions

The four vendors presented different solutions to automate the cargo inspection and audit activities using PDAs. However, the use of PDAs by inspectors and auditor would need further elaboration and details to decide on the best hardware and configuration to use. The elaboration shall be conducted in a cost-benefit analysis manner taking into consideration the following factors: the best option that can meet ASEZA business requirements, geography challenges, total cost of ownership and return on investment.

Therefore and ensure impartiality, transparency and equal opportunity, ASEZA is seeking AMIR II assistance in engineering the best mechanism and approach to issue and provide funding for a request for proposal that highlights the inspection and audit business objectives and requirements, implementation time-frame, technical requirements, vendor scope of work and other related components and possibly invite the short-listed vendors to submit their proposals.

In short, ASEZA Customs is expecting to:

- ◆ Implement the project within two months period
- ◆ Implement user friendly and easy to use application that will encourage and facilitate inspectors and auditors to use the PDA and conduct their daily tasks and activities.
- ◆ Implement a web based bilingual (Arabic / English) secure inspection and audit system that applies the cargo inspection and audit business rules and standards defined by ASEZA Customs and Revenue Commission.

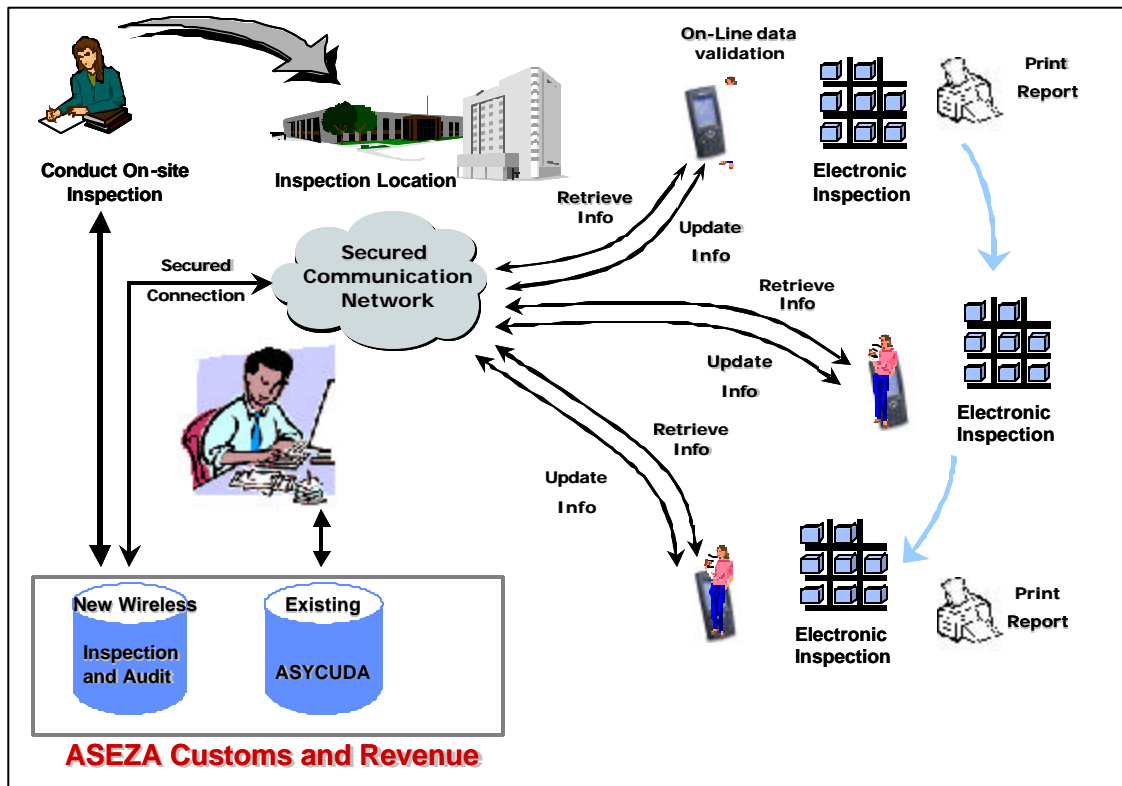
- ◆ Deliver and install rugged PDA (handheld computers) with related communication hardware required to connect the solution in an integrated approach and a bar-code printer(s).
- ◆ Deliver fit/gap analysis report by studying and understanding the existing inspection and audit activities and recommending the possible enhancements and improvements that need to be incorporate in the current business processes before implementing the new system.
- ◆ Configure the supplied hardware with all required software that makes these hardware working online with the supplied/developed system.
- ◆ Online integration with all required systems under the scope of this project and as per the integration requirements to be discussed at implementation time.
- ◆ Know-how transfer and training for the different users of the system such as commissioner, system administrators, end users, inspectors, auditors and sales tax.
- ◆ Deliver technical, user and training manuals.
- ◆ Implement the project in a phased approach to allow for proper know-how transfer and proper project evaluation.
- ◆ A two years warranty for the proposed hardware and software.
- ◆ A five years maintenance cost forecast for the proposed hardware and software.

Generally, the following are broad functional requirements

- ◆ Centralized database of inspection and audit
- ◆ Bilingual interface (Arabic for local language & English as reference language)
- ◆ Secure web based application
- ◆ The system should have a modular design with multiple user interfaces
- ◆ Automatic & manual inspection and audit scheduling
- ◆ Remote and mobile data synchronization.
- ◆ Automatic online alert system
- ◆ Automatic online multilevel approval system
- ◆ Standard data dictionaries of:
 - ◆ Goods Types and Nature
 - ◆ Violation types
 - ◆ Customers profiles
 - ◆ Inspection Locations
- ◆ Parameterized system to define different business rules and security issues.
- ◆ Dynamic export and import capabilities to import documents and export data to external systems
- ◆ Integration with existing ASYCUDA system and Sales Tax System
- ◆ Ability to perform function with minimal keystrokes
- ◆ Provide GUI interface, windows and pull down menus
- ◆ Ability to toggle or hot-key to any screen table or application
- ◆ Ability to advise users of data entry or command errors with clear and concise messages
- ◆ Display data entry or functional errors consistently on a specific area of the screen or in a pop-up window
- ◆ Display system messages on a pop-up window
- ◆ Provide on line help facility via function key or icon from any screen or field
- ◆ Ability to use Arabic and English in on-line help text
- ◆ Provide search capability in Arabic and English
- ◆ On all screens and fields, the entry of coded field should be through a list of values (LOV)
- ◆ List of value (LOV) code tables should be user definable

The system is envisioned to operate in an online mode as per the following scenario for Phase I (Inspection)

- ◆ Once the declaration has been examined, channeled and ready for inspection the new system will generate a “To-Do” list for the designated inspector based on his schedule and workload.
 - ◆ An electronic notification message is sent to the inspector’s PDA to update his inspection list and cache related information.
 - ◆ The inspector electronically by using the PDA, will access consignment and declaration details, carry on site examination, record his comments and record any violations.
 - ◆ The above comments and details will be automatically updated with the central system and amend the status of the consignment on the ASYCUDA system. This update operation should be performed in a transparent manner and without the intervention of the PDA user (inspector)
 - ◆ The inspector and if no violations are noted will electronically release the consignment and move to the next inspection task without waiting for customer interaction or assistance.
 - ◆ Inspectors will be carrying minimum documentation while conducting the inspection, as the handheld will provide access to such data electronically.
 - ◆
- The figure below depicts the proposed new inspection process to be implemented using the PDA.



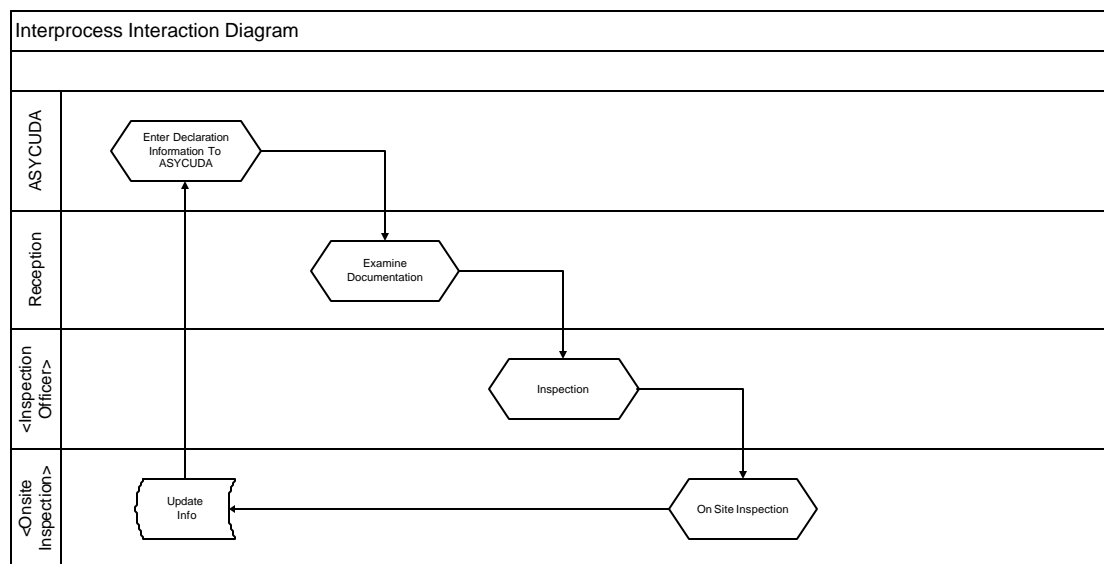


Figure 2

The objective of Phase II is to utilize data from the new inspection and ASYCUDA system along to enhance the audit criteria and provide the audit section with information detailed and accurate information. Currently, this audit process involves report number 803 from the ASYCUDA system, manually classify the registered enterprise, assemble supporting document and data then plan the audit. The number of audit visits and their efficiency is currently under utilized and not as efficient as ASEZA would like to be. Therefore with the implementation of the new system will be able to:

- ◆ Build Audit Reports electronically from the inspection and ASYCUDA database
- ◆ Allow auditors to conduct wider range of site visits
- ◆ Enable auditors to access the audit information and reports in an on-line and real-time approach.
- ◆ Enable auditors to records their notes, audit reports and recommended action electronically and update the customer profile in a timely manner
- ◆ Enable ASEZA Customs and Revenue to utilize audit reports and actions in order to enhance and update its procedures and policies.

The newly automated audit process will change as follow:

- ◆ Auditors login to the system using their username and password
- ◆ Search by Registered Enterprise Number, Enterprise Name, Goods Type or any other searchable criteria to retrieve the designated audit profile.
- ◆ Auditors will be able to audit cargo, compare it with declared quantities, analyze risk, note variations and post the recommended actions electronically on the PDA.
- ◆ Customer Profile and ASYCUDA database will be updated automatically.
- ◆ Management at ASEZA Customs directorate will be able to track, record and plan for post-audit action in a timely manner.

The decision to proceed to Phase II will be made based on results and deliverables from the previous phase (Phase I).

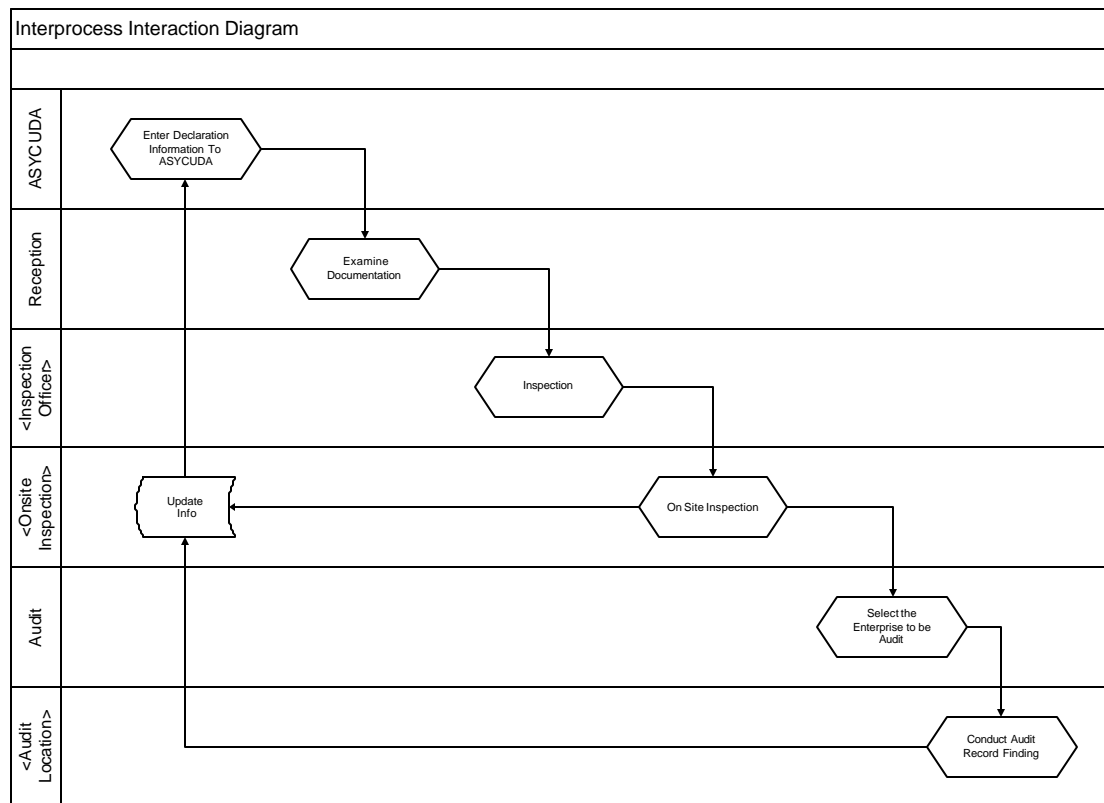


Figure 3

In order to implement the PDA project, ASEZA Customs department wishes to receive proposals for the PDA project that comprises of the following 3 categories of deliverables:

- ◆ Software (backend and Handheld) application: A Comprehensive, integrated and fully functional wireless/mobile software application capable of fulfilling the inspection and audit current business requirement, streamline the business processes and integrate with existing ASYCUDA and Sales Tax systems.
- ◆ Hardware devices: Rugged PDA (handheld) Computer
- ◆ Project Management and Implementation Services: project management, implementation, and integration with other systems, training, solution documentation, warranty and support.

ASEZA is also looking for AMIR II to provide sufficient funding for the implementation and deployment of the PDA project.

6.1 Software Application

The proposed solutions shall fully comply with the broad requirements set forth and comply with / able to:

- ◆ Inspection and audit current and future business requirements,
- ◆ Integrate with the existing ASYCUDA and Sales Tax systems,
- ◆ Operate in an on-line mode and capable of storing data (batch-mode) for synchronization with the backend system whenever the connection is not available,

- ◆ Provide inspectors with an easy-to-use tool that facilitates the inspection process and make it easy for them to complete their jobs in minimum period of time
- ◆ Ensure that data exchanged between any two points of the system is secured
- ◆ Support and uses Oracle RDBMS
- ◆ Minimize interaction with the backend system by caching data for later synchronization and efficiently use the GPRS connection

A detailed functional specification can be developed and provided to AMIR for enclosure in the RFP whenever requested.

6.2 Hardware Devices

ASEZA is looking into using up-to-date rugged handheld computers (PDA) capable of

- ◆ Providing inspectors and auditors with up to-date rugged handheld computers along with their multi docking stations, which will be used to:
 - Upload the daily inspector/auditor plan from the backend systems Register inspector notes, observations / checklists of the inspected consignment
 - Capture violations information if any
 - Record information of physical evidences (sample information, documents information) if required
 - Register recommended actions imposed on the inspected consignment and as per ASEZA rules and regulations
 - Update the status of the daily inspection plan
- ◆ Those PDAs shall be integrated with bar code scanners, and shall be bilingual offering both English and Arabic display and keyboard.
- ◆ PDAs should be configured to use GSM//GPRS. ASEZA will arrange for SIM cards, connection and set-up fees.

The following table illustrates the minimum required specification of the PDA, ASEZA has developed its specification after conducting thorough test of three different types of PDA (Dolphin 7450RF, Symbol 8500 and Psion Netbook .NET) that has been provided by USAID under the AMIR II project.

No.	Feature	Description
1-	Weight	Less than 1 kg with the printer
2-	Expansion capability	2 expansion slots for PCMCIA card with at least 64 MB
3-	Size	Appropriate size for ease of carrying and use
4-	Display	Active viewing area: not less than 5 cm x 5 cm Selectable contrast, preferable an auto sensing contrast Full graphic capability Selectable brightness Acceptable resolution : not less than 240 x 240
5-	Screen visibility	Good screen visibility during the daylight and dark conditions
6-	Keyboard	Preferable full keyboard with navigation pad/button
7-	Processor	At least 120 mhz
8-	Case	Preferable a Protection case, leather made
9-	User environment	Operating temperature : 55 c Waterproof/dustproof At least 1 meter fall free distance, Rugged PDA
10-	Operating system	Arabized Windows CE 3.0 or Pocket PC 2002
11-	Memory	At least: 64 SDRAM and 32 MB flash memory

No.	Feature	Description
12-	Communication capability	TCP/IP capable communications software.
13-	Communication ports	RS 232 serial ports and a Charger ports
14-	Battery	Capable to work continuously before recharging for at least 5 working hours
15-	Rechargeability	Preferable that it is rechargeable within at most 3 hours and had the ability to be charged from the vehicle's cigarette lighter
16-	Printer bar-code	A bar-code printer that support myler and metal bar-codes. The printer should be of a heavy-duty nature and capable of printing volumes of bar-code.
17-	Printing capability	Preferable to have the ability to print to printers' available through wired or/and wireless communication. Ability to print to different types of printers and paper sizes.
18-	Barcode scanner	Integrated barcode scanner that support 1D and 2D
19-	Image capturing	An Optional integrated image capture device Ability to display colored images
20-	Docking station	Multi docking station for at least 4 hhc's
21-	Quantity	Initially and for Phase I, ASEZA will need 10 handhelds and 2 bar-code printers. Upon results from the first phase ASEZA will be able to decide on the required quantity for the second phase.

To connect the backend system with the PDA through GSM/GPRS a GSM/GPRS access point will need to be supplied, installed and configured. The access point will enable inspectors and auditors to access information wherever the GSM/GPRS network is operational. The specification and TCP/IP configuration of the router will need to be decided with the GSM/GPRS service provides (i.e. either FastLink or MobileCom)

Finally, the backend system will need to be installed on a separate dedicated server, and we highly recommend having two servers for backup, test and training purposes. Prospected bidders will decide the detailed specifications of the server as each of them has his own preferred configuration to meet ASEZA requirements.

Figure 4 below, provides a high-level overview of the interaction between the PDA and the backend system using GSM/GPRS..

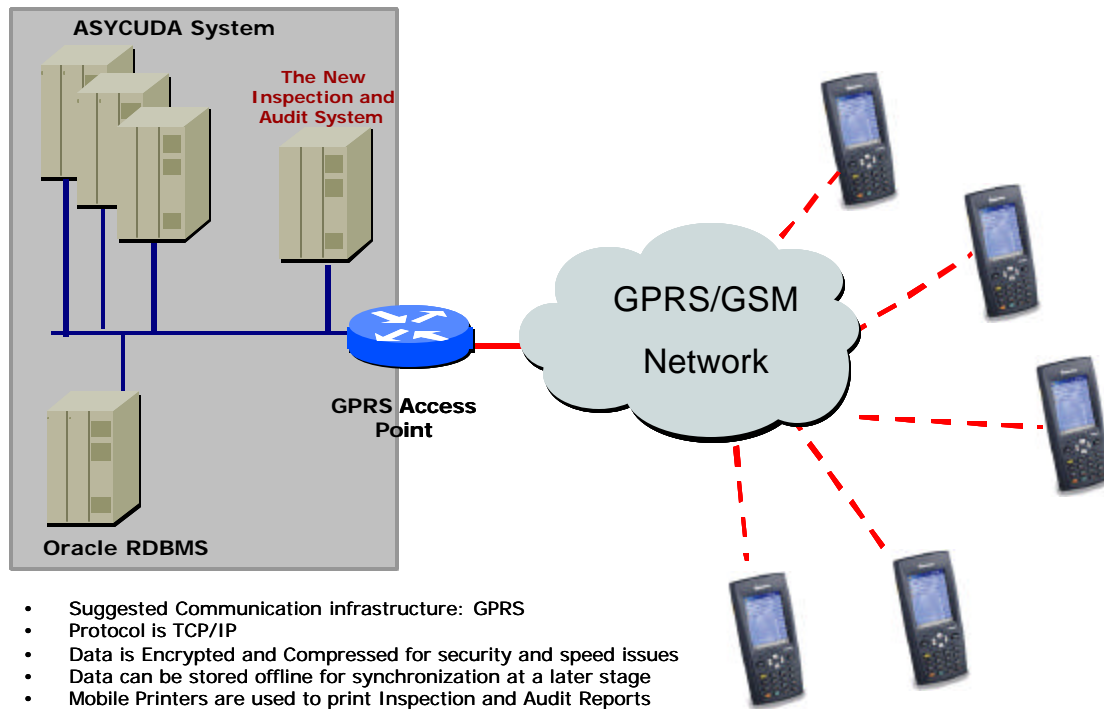


Figure 4

6.3 Project Management and Implementation Services

The project management and implementation services are services offered by solution provider in order to successfully deploy the solution and ensure its sustainability. ASEZA is expecting solution providers to provide detailed information on the following services

- ◆ Project Management: which shall include project , risks and change management methodologies, project plans, project team structure, resumes of project team members, reporting methodology and issues management.
- ◆ Implementation: solution providers shall provide a detail description of the implementation procedure and plans to analyse , design , develop, install , configure and integrate , test and run the supplied application software.
- ◆ Integration with existing ASYCUDA system
- ◆ Training Services: End users training, management, inspectors, auditors, and manager on the use of the new system. Training need also to be conduct for ASEZA Customs IT personnel.
- ◆ Documentation: To deliver user, administration and technical documentation Warranty: a two-years warranty for the supplied hardware and software.

6.4 Users of the New Inspection and Audit System

The new solution should be able to serve the following categories of users

- ◆ System Administrators at ASEZA Customs IT directorate
- ◆ Inspectors
- ◆ Auditors

- ◆ Customers (Registered Enterprises)
- ◆ ASEZA Customs Management Staff

Rationale for Using GSM/GPRS Service

Different communication means and options are available to provide on-line connectivity and coverage at the inspection yards and audit locations, the decision not use GSM/GPRS was made based on the following

- ◆ The GSM/GPRS service is provided by the two GSM operators in Jordan FastLink and MobileCom.
- ◆ The ASEZ is fully covered by the GSM/GPRS service. The GSM/GPRS service is also covering a great area of Jordan.
- ◆ The running cost of the GSM/GPRS service is low compared to VSAT service.
- ◆ The cost of setting up and using the GSM/GPRS service is low compared to establishing Spectrum wireless network.
- ◆ The RF wireless connection provides a point-to-point connectivity whereas the GSM/GPRS service provides a wireless network for the PDA to simultaneously connect and communicate with the backend system.
- ◆ The time needed to setup the GSM/GPRS service is marginal if compared to VSAT or establishing a zone wireless network .

7. Benefits and Expected Enhancements

By implementing a modern and mobile inspection and audit system, many benefits and enhancements would be achieved among which are:

- ◆ Improved Service Levels by saving time, minimizing data errors and minimizing shuttle trips between Customs directorate and inspection yards
- ◆ Enhanced controls and tighter integration would be achieved. The new process design capitalizes on the information integration and flow between the ASYCUDA system and the new system. Customers will enter the declaration information to ASYCUDA and automatically ASYCUDA will share such entries with the new system. The new system will have to capability to update ASYCUDA information in an on-line and accurate manner.
- ◆ Increased Staff Productivity
- ◆ Improved quality and timelessness of data that will result in enhanced corporate decision making
- ◆ Reduced operation and administrative costs by streamlining business processes and converting paper based systems to an electronic format
- ◆ Provide high quality data for use by the Risk management coordination unit; inspectors and Auditors and Sales tax; Investigators and the Intelligence Analyst Unit.
- ◆ Provide comprehensive and integrated information pack to ASEZA Customs management and high-level decision makers.

8. Critical Success Factors

Critical Success Factors are key elements that need to be in place to facilitate successful achievement of project objectives. ASEZA would like to confirm the following factors:

- ◆ Prospective Bidders should have string technical, functional, project management and experience in designing, developing and implementing mobile application and streamlining business processes.
- ◆
- ◆ The new system should be bilingual, secured, configurable and able to meet ASEZA requirements and expectations.
- ◆
- ◆ ASEZA would like to receive a complete proposal that includes all the integral elements for successful implementation
- ◆
- ◆ Ensure that the system is configured for the optimum performance.
- ◆
- ◆ Know-How transfer should take place and happen at every stage of the project.
- ◆
- ◆ Working in partnership with ASEZA Customs to ensure successful implementation of the system.

9. Constraints

The following constraints are noted:

- ◆ Time is of the essence, the implementation time frame for the project should not exceed the two months period.
- ◆ Inspectors and Auditors are the prime and key users of the system, therefore they should be well-trained and the offered solution should be easy to use, minimize key strokes and provide added-value to ASEZA inspections and auditors.

10. Risks and Risk Mitigation

The following risks to the project have been identified, risks will be analyzed, evaluated and treatments identified as the outcome of a more formal risk assessment once the scope has been signed off will be developed:

- ◆ The project fails to deliver the stated objectives
 - Inadequate management of the project
 - Poor co-operation from senior management or the staff
 - Technology partner with no previous or solid experience in developing and implementing wireless solutions.
- ◆ The project fails to manage the necessary transition
 - Inability to develop adequate level of skills and knowledge
 - Inadequate management of project
- ◆ The project fails to deliver robust outcomes

- Employees resist the use of PDAs
- Insufficient knowledge and experience in mobile solutions
- GSM/GPRS connectivity is not established

ASEZA is expecting prospective bidders to submit a detailed criteria for risk management and mitigation. In addition ASEZA strongly believe that the following measure and if applied will minimize risks

- ◆ Development of a detailed project implementation plan
- ◆ Establishment of open and effective communication channel
- ◆ Fully support and cooperation for ASEZA Customs Management
- ◆ The active participation and collaboration of ASEZA staff and the prospective bidder
- ◆ Comprehensiveness of the offered training
- ◆ Prospective bidder's solid experience in delivering wireless/mobile solution

11. Assumptions

The following are assumed:

- ◆ The funding for this project is to be provided by USAID through AMIR II program.
- ◆ Funding includes software, hardware, project management and implementation services.
- ◆ Training and Know-How transfer will be provided to sufficient number of quality people.
- ◆ Prospective bidders are well-established technology companies with prime focus on wireless solutions and experience with implementing and developing technology solutions for implementing PDA projects.
- ◆ Adequate technical support is provided by the prospective bidder.
- ◆ ASEZA would like to also benefit from AMIR 2.0 experience in managing software projects and therefore expects to receive logistical support from AMIR 2.0 IT staff.
- ◆ ASEZA will be responsible for providing SIM cards and paying for GSM/GPRS service and connection fees.

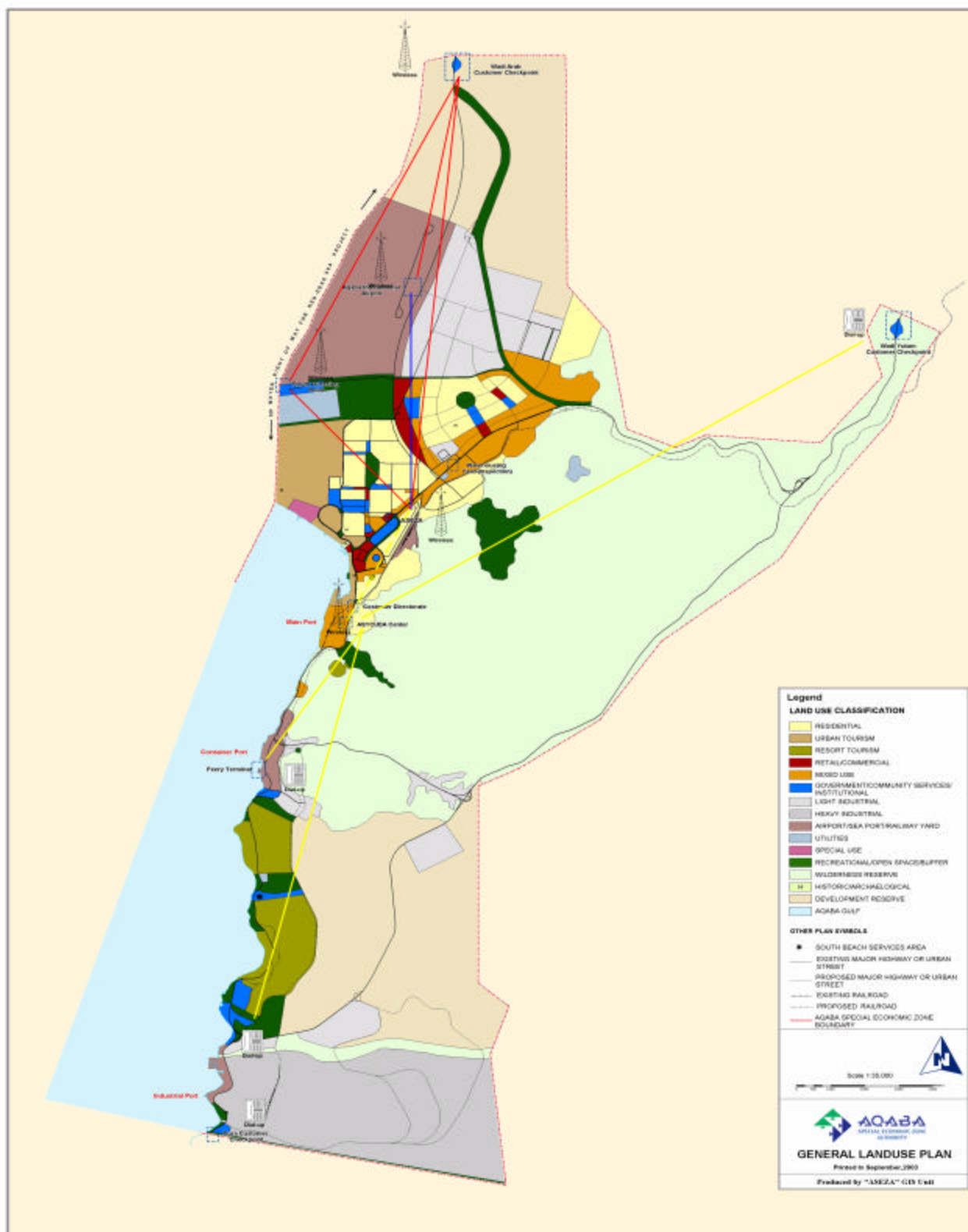
Appendix A – References

- ◆ PDA Proof of Concept Plan for ASEZA Customs, 2-December-2002
- ◆ ASEZA Requested Handheld Automation (PDA) Project, September 2002

Appendix B – List of Previously Short-Listed Vendors

- ◆ Business One, Nidal Basha, Area Sales Manager, 7th Circle, Shaban Building, P.O.Box 950745 Amman 11195 – Jordan, telephone +962 6 580 2626
- ◆ GCE Soft, Yousef Barghouthi, Managing Director, P.O.Box 481 Tla' Al-Ali Amman 11953 Jordan, Telephone+962 6 553 6608
- ◆ Eskadenia Software Solutions, Shadi Sa'adeh, Marketing and Sales Manager, P.O.Box 1555, Amman 1182 Jordan, Telephone: +962 6 551 0717
- ◆ Javna Wireless Software Solutions, Mansour Mansour, Chief Executive Officer, P.O.Box 850505, Amman 11185 Jordan, Telephone +962 6 585 8193
- ◆ Apexion International, Immad Adawiya, Senior Project Manager, Amman Jordan telephone +962 6 565 0511

Attachment Three: Map of Aqaba – Communications Infrastructure



Attachment Four: Project Plan

